

Nectarine Tree Named 'Sunbest'

BOTANICAL CLASSIFICATION

Prunus persica. --

Background of the New Variety. The present invention relates to a new and distinct variety of nectarine [*Prunus persica* (L.) Batsch] tree adapted to a subtropical (low chill) winter climate. This new tree, named 'Sunbest', produces highly colored, good eating quality, semi-freestone, melting flesh fruit for fresh market in early May at Gainesville, Florida. Contrast is made to 'Sunraycer' (unpatented) nectarine, a standard variety, for reliable description. 'Sunbest' is a promising candidate for commercial success in that it has large, attractive red skin, sweet fruit that ripen evenly.

Origin of the Variety. 'Sunbest' nectarine tree (genotype) originated in a cultivated area of the fruit breeding program at the University of Florida, located at Gainesville, Florida where it was tested. The seed parent was 'Sunraycer' nectarine and the pollen parent was 'Suncoast' (unpatented) nectarine. 'Sunbest' nectarine was selected in 1994 because it exhibited yellow, melting flesh, in a large fruit with a bright red skin. It was designated and tested as Fla. 94-15n. It was asexually propagated by budding onto 'Flordaguard' (unpatented) seedling rootstock (for root-knot nematode control) and determined to have unique tree and fruit characteristics making it worthy for commercial fresh fruit production. There are no known effects of this standard rootstock on this scion cultivar. Asexually propagated plants remained true to the original tree and all characteristics of the tree and the fruit were transmitted.

Summary of the Variety. The new and distinct variety of nectarine tree bears moderately early ripening fruit, and has a low chilling dormancy requirement. 'Sunbest' blooms (non showy flowers) with 'Sunraycer' nectarine in early February at Gainesville. The estimated chilling requirement is 225 chill units, based on bloom 1 to 2 days before 'Sunraycer'. 'Sunbest' nectarine tree is characterized

by bright red skin fruit having firm, melting and yellow flesh. Fruit are semi-freestone and of good flavor and eating quality. The trees are vigorous, productive and regular bearing. Trees attain in two years, a height of two meters and a spread of one and a half meters at Gainesville. Terminal growth of up to a half meter annually is common on mature five-year-old trees with normal pruning to a vase shape.

The first fruit ripen in early May at Gainesville or in about 80 to 85 days from full bloom, which is about 3 to 5 days before 'Sunraycer'. The fruit are uniformly large (about 20% larger by weight than 'Sunraycer') for an early-mid season nectarine. Ripe fruit have 90 to 100% solid (no stripes) red skin with a small amount of red pigment in the flesh at the tip end of the fruit, especially on trees stressed during hot, dry weather. There is no red pigment in the flesh at the pit. The flower anthers are light red to yellow, and leaf glands are reniform, common characteristics of many standard nectarine varieties.

Description of the Drawings. The accompanying drawing is a color photograph which shows a typical specimen of the fruit, leaf, and stem of the new variety as nearly true as it is reasonably possible to make in a color illustration of this type. The photograph shows an attractive shape and exterior coloration of four specimens of fruit above a ruler in side view, stem end view, a blossom end view, a side view showing the suture and a fruit cut longitudinally to show the pit.

Detailed Botanical Description. The tree, flowers, and fruit may vary in slight detail due to variations in soil type, cultural practices, and climatic condition. The potential for commercial production of fresh fruit by 'Sunbest' is high, due to its attractive red skin over a bright yellow ground color, large fruit of good flavor, and good firmness with even ripening throughout the fruit. The present botanical description is that of the variety grown on 5-year-old trees on 'Flordaguard' rootstock under the ecological conditions prevailing at Gainesville, Florida. Colors (except those in common terms) are

described from "The Pantone Book of Color" published by H. N. Abrams, Inc., N.Y. 1990.

Tree:

Ploidy. - Diploid

Size. - Trees are medium stature when trained to an open vase form.

Vigor. - Moderately vigorous, and must be summer and winter pruned when grown to a vase shape to keep the tree open to get strong fruiting wood in the lower center. Trees respond typically to irrigation and fertilization. Tree growth of 4 to 6 feet in height and 3 to 5 feet in width occurs the first growing season in the field.

Density. - Light to medium in branching habit. Foliage density is high due to short internodes (8 to 11 nodes\10cm shoot length). Internode length is shorter than in most standard varieties. Pruning is required to open the tree center to promote sunlight entrance for enhancing fruit color and sugar.

Form. - Semi-upright, but easily spread when pruned to vase shape.

Hardiness. - Hardy with respect to typical north central Florida winters.

Bearer. - Very productive annually without alternate bearing observed. Trees are self fertile and must be fruit thinned to avoid limb breakage and obtain large fruit size. Yields equivalent of 200 bushels (50 lbs. each) per acre have been obtained on 5-year-old hand thinned trees under a commercial simulated orchard culture at Gainesville. Trees annually set several times the number of fruit for a desired crop load.

Chilling requirement. - Estimated endodormancy chilling requirement is 225 chill units based on time of bloom and leafing.

Trunk:

Size. - Medium trunk diameter attaining 8 cm diameter at a height of 30 cm at the end of 3

years growth at Gainesville.

Texture. - Medium smooth, but changes to medium shaggy as tree ages.

Bark color. - Older bark gray, Chinchilla (Pantone 17-1109).

Lenticels. - Numerous (23 per 4 square inches of surface area of trunk) and small (2-5mm length perpendicular to the trunk) with the center being yellowish brown, Medal Bronze (Pantone 17-0942).

Branches:

Size. - Strong growth of scaffold branches. Fruiting branches mostly large diameter (4 to 6 mm) and not overly numerous, resulting in strong fruiting wood. Thus, the tree growth and structure permits easier and faster winter pruning.

Texture. - Relatively smooth, numerous amount of lenticels attaining size found on trunk and old scaffolds. Roughness increases with age.

Color. - New wood is light green, Pale Star (Pantone 12-0626); Old wood is more brown, Ash (Pantone 16-3802).

Crotch angles. - Angles are selected at 45 to near 90 degrees in first year of tree training.

Natural angles are within the normal range of standard varieties for a semi-upright tree.

Leaves:

Size. - Medium; 13 to 17 cm length, including the petiole; 3 to 4 cm width. Measurements were made on vigorous upright shoots of summer growth.

Thickness. - Regular and average for commercial nectarine varieties..

Form. - Lanceolate.

Apex. - Acute.

Margin. - Serrulate, slightly undulate.

Base. - Cuneate.

Surface. - Upper, glabrous; Lower, medium large veins that are pinnately netted.

Color. - Lower surface is green, Avocado(Pantone 18-0430); Upper surface is slightly darker green, Mosstone (Pantone 17-0525). Petiole and mid-vein show red anthocyanin in autumn, characteristic in peach and nectarine for 85 to 90 days or less in fruit development period (bloom to ripe).

Glands. - Two to 4, small, reniform glands mostly on lower leaf blade, but occasionally on petiole. Leaf glands are moderately smaller than those on most commercial varieties. Leaf glands on young leaves are light green, Leek Green (Pantone 15-0628), darkening to Green Moss (Pantone 17-0636) on older leaves in mid- summer.

Petiole. - About 1 cm (0.8 to 1.1 cm) length; 1.3 mm diameter. Light green, Poison Green (Pantone 16-6444) darkening to Plantation (Pantone 18-0832) on older leaves of summer. Grooved longitudinally.

Stipules. - Medium (equal to most commercial peach varieties), usually 2 per bud, and abscising just before leaf becomes full size in summer growth.

Arrangement. - Alternate.

Flower buds:

Hardiness. - Hardy with respect to north central Florida winters (16F minimum observed).

Abundance. - Very high due to shorter than average internode length. Most buds set fruit in absence of spring frosts and show little evidence of bud drop.

Size. - Medium, average 3.5 mm length in mid winter.

Form. - Plump, conic and free.

Surface. - Pubescent scales.

Color. - Brown, Stucco (Pantone 16-1412) in late summer.

Flowers:

Blossom period. - One to 2 days before 'Sunraycer' nectarine - average 50% bloom February 5 to 10 most years at Gainesville, but occurring over a 7-10 day period. Time and length of bloom dependant on ambient temperature.

Aroma. - Slight and pleasant.

Flower density. - Abundant, varying 1 to 4 per node, but usually 2. Density very high due to reduced internode length (see tree density).

Type. - Non-showy, location and seasonally variable within the range of commercial non-showy varieties. Average flower diameter - 22mm. Average petal length, 10 mm; width, 5mm. Texture smooth.

Color. - Orchid Pink (Pantone 13-2010) at flower opening, and within the pink range of standard varieties.

Flower parts. - Stamens and pistil size, shape and color are within the range of standard commercial varieties. The number of sepals and petals is 5 as is common for most commercial varieties. Sepals are pubescent and petals are glabrous.

Calyx cup. - Medium small in the size range of commercial varieties.

Anthers. - Light red to yellow, Orange (Pantone 16-1253), at flower opening, fading to yellow, Banana (Pantone 13-0947), before pollen shed, common to many nectarine varieties, regular size.

Pollen. - Abundant and bright yellow, Snapdragon (Pantone 13-0840), common to many nectarine varieties.

Fertility. - Fully self fertile, and no cross pollination is required. Fruit set is abundant.

Fruit:

Maturity when described. - Tree ripe, May 3, 2001 at Gainesville.

Date of picking. - First, May 1, 2001; Last, - May 8, 2001 at Gainesville.

Size. - Uniform, medium large (large size for early mid-season maturity at 120 to 140 g).

Varies with fruit number per tree, soil type, climatic conditions and cultural practices.

Average equatorial diameter. - $2 \frac{3}{8}$ inches (59 mm).

Average polar length (stem to distal end). - $2 \frac{5}{8}$ inches (65 mm).

Pedicle size. - Length is approximately 7 mm; Width is approximately 3 mm.

Longitudinal section form. - Strongly oval.

Transverse section through diameter. - Round.

Suture. - Shallow and inconspicuous.

Ventral surface. - Usually rounded.

Base. - Slightly cordate.

Apex. - Usually rounded to slightly obtuse.

Crater at stem attachment. - Flaring circular with fruiting branch depressing on base of fruit.

Depth is 6 to 9 mm; breadth is 18mm at top and 4 mm at pedicle attachment.

Skin:

Thickness. - Medium in comparison to commercial nectarine varieties.

Texture. - Medium in comparison to commercial nectarine varieties.

Tenacity. - Tenacious to flesh.

Color. - Bright red, Flame Scarlet(Pantone 18-1662), over 90 to 100% of skin. Ground color is bright yellow, Sunset Gold (Pantone 13-0940). Fruit exposed to sunlight have a higher degree of enhanced red skin.

Tendency to crack. - None observed.

Taste. - No astringency observed.

Epidermis. - Glabrous, waxy and smooth.

Flesh:

Ripens. - Evenly within each fruit.

Texture. - Firm, juicy, melting when fully ripe.

Fibers. - Very fine, small, tender, and abundant.

Aroma. - Moderate and in the middle range of commercial nectarine varieties.

Eating quality. - Good, moderately sweet, slightly acid. Soluable solids were about 11 brix and titratable acid was 0.86 at 0.9 Kg penetrometer firmness.

Juice. - Abundant.

Color. - Yellow, Amber Yellow (Pantone 13-0942), with slight speckled red in the flesh near the fruit tip, especially on stressed trees under dry, hot conditions. There is no red at the pit.

Browning by oxidation. - Very slight on tree ripe fruit beginning to soften.

Amygdalin. - Undetected.

Stone:

Type. - Semi-freestone.

Size. - Medium small: average length is 30 mm; average width is 23 mm; average thickness is 18 mm; average wall thickness is 5-6 mm.

Color. - Grey Sand (Pantone 13-1010) when freshly exposed.

Form. - Oblong.

Base. - Straight.

Apex. - Acute.

Sides. - Near equal.

Surface. - Irregularly furrowed toward the ventral edge, pitted from base to apex.

Ridges. - Jagged toward the base.

Tendency to split. - None observed.

Seed. - Bitter (amygdalin is abundant) kernel. Viable if stratified upon removal from fruit at harvest, and without drying. Kernel is brown, Sunflower (Pantone 16-1054) when first removed from ripe fruit. Side is 14 mm length, 9 mm wide and 3.5 mm thick. Shape is acute tip with obtuse base and overall ovate shape.

Use - Fresh; dessert.

Resistance to disease. - High resistance to bacterial spot incited by *Xanthomonas campestris* pv. *pruni* (Pers.) Diet. Resistance to other fruit and tree diseases are within the range for commercial nectarine cultivars in Florida. No unusual resistance or susceptibility to insects and diseases noted.

Keeping quality. - Excellent after 10 days at 2C and with minimal bruises or scarring appear on skin.

Shipping quality. - Degree of firmness at harvest and firmness retained in refrigeration for 10 days at 2C, with no internal breakdown of flesh or appreciable loss of eating quality, indicates fruit

should be highly acceptable for shipping.